What is claimed is:

1. A probe head for a coordinate measuring apparatus, the probe head comprising:

a yielding part;

measuring systems for measuring the deflection of said yielding part in respective directions;

a damping device for damping said yielding part in a pregiven direction; and,

said damping device including at least one friction brake for generating a friction force which can be electrically changed.

2. The probe head of claim 1, said friction brake including a flag and an electromagnet for electromagnetically drawing said flag to said electromagnet.

3. The probe head of claim 2, wherein said flag is a first flag and said damping device includes a second flag; and, said first and second flags coact electromagnetically with said electromagnet.

4. The probe head of claim 3, wherein at least one of said first and second flags is reinforced in the region of said electromagnet.

5. The probe head of claim 1, said damping device further comprising clamping means for clamping said flag.

6. The probe head of claim 5, wherein said flag has a side

facing away from said electromagnet; and, said clamping means comprises a plate disposed on said side of said flag in spaced relationship thereto; a holder; and, said plate is resiliently mounted on said holder so as to permit a displacement relative thereto when said plate is drawn by said electromagnet to clamp said flag therebetween.

7. The probe head of claim 6, wherein said plate has a thickness greater than the thickness of said flag.

8. The probe head of claim 1, further comprising an electronic controller for electrically adjusting said friction force of said friction brake.

9. The probe head of claim 8, said electronic controller including means for adjusting said friction force in proportion to the time-dependent derivative of the measured deflection in a particular direction (x, y, z).

10. The probe head of claim 9, said electronic controller including means for clamping said probe head for a short time to counter a rebound of the probe head during a contacting operation.

11. The probe head of claim 8, said friction brake including a flag and an electromagnet coacting with said flag; and, said electronic controller including means for applying an alternating current to said electromagnet for generating a low damping.

12. The probe head of claim 8, said friction brake including a

flag; an electromagnet coacting with said flag; and, a spring-suspended plate in spaced relationship to said flag; said electronic controller including means for clamping said friction brake by first applying a voltage (U_{SP}) above a threshold plate (U_{plate}) so that said spring-suspended plate is pulled toward said electromagnet and then dropping said voltage (U_{SP}) to below said threshold voltage (U_{plate}) after said spring-suspended plate has been pulled toward said electromagnet.

13. The probe head of claim 8, further comprising a measuring force generator drivable by said electronic controller; and, for clamping said yielding part in a pregiven desired position of a corresponding one of said measuring systems, said electronic controller functioning to clamp said friction brake in a desired position of said yielding part; and, causing said measuring force generator to generate pulse-like measurement forces opposite to the direction of the deflection relative to said desired position until said corresponding one of said measuring systems is in its zero position.

14. The probe head of claim 8, wherein said electronic controller increases the friction force of said friction brake or clamps said friction brake during acceleration operations of said probe head.